

Engineering Gateways - case study

HEI name: Northumbria University
Employer: Nexus
Student name: Mark Shield
<p>1. Individual workbased student</p> <p>Please provide: (maximum 500 words)</p> <ul style="list-style-type: none"> • What attracted you to the programme? • Name of any academic qualification already held • Summary of the key benefits in undertaking the programme • Explanation of the impact of the programme on your professional aspirations
<p>The main attraction to the course was being able to seamlessly intertwine a full time engineering role within the organisation with the academic qualification of a masters. The course provided the guidelines and basis to allow a course entirely created to my own requirements and demands. Through this I was able to ensure I was acquiring the skills lacking to allow me to successfully perform my role all the while working towards chartered status with the Institute of Engineering and Technology.</p> <p>Before beginning the course and my role with the organisation I obtained a BSc degree in Computing Science from Newcastle University, the level obtained was upper second class (2:1).</p> <p>The key benefit of the programme is the ability to structure the programme to my exact needs. Through this I have been able to create a working programme which reflects areas of my role I feel needed improving. The course has also allowed me to identify key business areas in which I have had little experience and by undertaking modules in these business areas I'm ensuring that these areas are covered.</p> <p>Through the programme I have been able to affirm my interest and aspirations to work within the engineering discipline with future aspirations towards obtaining a more manageable role in the future.</p> <p>Are you using an electronic recording system provided by your professional engineering institution? Yes.</p> <p>Can the Case Study be published or is it confidential? Published if required.</p>
<p>2. Employer</p> <p>Please provide: (maximum 500 words)</p> <ul style="list-style-type: none"> • Overview of type and size of company • Summary of the work-related activity/projects contributing to the MSc Professional Engineering • Statement about how the MSc PE student's work has impacted on the business • An indication of when the benefit / impact occurred, including appropriate indicators
<p>Nexus employ 620 people and is the Passenger Transport Executive for Tyne and Wear and is a public sector body whose role is to plan, promote and provide public and sustainable transport in the area it serves. Our plans include a £600m project to modernise Metro, providing a step change in comfort and reliability for our passengers. We are creating a network of Superoutes - modern accessible buses running on the main traffic corridors, with extensive priority schemes, speeding journey times into the urban centres of Newcastle and Sunderland. Our task is to improve the quality of life and fortunes of everyone in Tyne and Wear, by creating better transport networks.</p> <ul style="list-style-type: none"> • Tyne and Wear Metro light rail system, used by 40 million passengers a year, a £350 million modernisation programme covering all aspects of the key assets: 60 Stations; 90 Metro Cars; 207 Bridges; 13 Tunnels; 33 Escalators; 34 Lifts; 120km of Track; 160 Points; 560 CCTV Cameras. • The Bus Strategy - a three-year action plan to improve the availability and quality of bus services, working together with commercial bus companies and local authorities, who govern highways. • North East Smart Ticketing Initiative - a £25 million project led by Nexus to introduce smartcard technology to public transport and public services across North East England, in partnership with transport operators and local councils. • Management of nine major bus stations, more than 300 'secured' bus routes, 11 Travel Shops, the Shields Ferry service across the mouth of the Tyne, a network of specialised social inclusion transport including school buses, wheelchair-accessible taxis, and a Call Centre handling 400,000 travel and booking enquiries a year <p>Summary of the work-related activity/projects contributing to the MSc Professional Engineering</p> <ul style="list-style-type: none"> • Implemented a new on train close circuit television system aimed at increasing security and monitoring on board the metro fleet. This required interface into the metro fleet and was designed to increase passenger comfort when travelling upon the network. To increase the reliability and availability of video footage a wireless

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network was incorporated to allow automatic download and distribution of footage.

- Implemented a new on train automatic public address system aimed at increasing DDA compliance around the network. This included interface into the metro fleet electrical circuits and the operation of both global positioning and inertial navigation systems. The business aspect of this project focused around developing a system that was DDA compliant and could be used by anyone not familiar with the network.
- Engineering role within the smart ticketing initiative project with main responsibilities including the management of installation of new ticket machines, validators and access barriers at certain locations around the network. Ensuring work is carried out following quality and safety policies and as designed during detailed design phase.

Statement about how the MSc PE student's work has impacted on the business

Graduates Engineers contribute more and facing a more competitive working environment than in previous years. There is an increased emphasis on empowerment and greater responsibility within early appointments. Graduate now have widespread responsibilities, hence the use of the MSc in supporting them and their training programme.

The Case Study can be published

3. University

Please provide: (maximum 500 words)

- Brief overview of how this case study partnership was initiated
- Summary of the key benefits to the academic and the institution
- Details of any specific outputs a. from this partnership

b. generally of being an Engineering Gateways academic institution

This case study partnership was initiated when Mark Shield approached the university to apply for the MSc Professional Engineering programme. Mark was accepted onto the programme based on his academic potential as well as his employer's potential to provide him with appropriate projects to engage with this MSc programme.

Key benefits currently experienced by the academics are detailed procedures and engineering tasks carried out in upgrading the metro stations and trains in Newcastle. The institution has benefitted through being recognised as an educational service provider to a leading transport company in Newcastle.

As Mark is still in his first year of the MSc programme it is too early to detail any specific outputs from this partnership. Northumbria University has greatly benefited by being an Engineering Gateways academic institution by gaining the recognition of being one of the pioneering universities to develop and promote the innovative work based route of potentially gaining an MSc qualification and CEng registration in one sitting.

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